

UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH  
AMENDED REPORT OF INVESTIGATION

Underground Coal Mine

Fatal Fall of Roof Accident (Amended)  
March 29, 2006  
(Victim Died April 10, 2006)

No. 4 Mine  
Jim Walter Resources, Inc.  
Tuscaloosa County, Alabama  
I.D. No. 01-01247

Accident Investigators

Raymond C. Dorton, Jr.  
Roof Control Specialist

Charles T. Langley  
Supervisory Mine Safety and Health Specialist

Originating Office  
Mine Safety and Health Administration  
District 11  
135 Gemini Circle, Suite 213, Birmingham, Alabama 35209  
Richard A. Gates, District Manager

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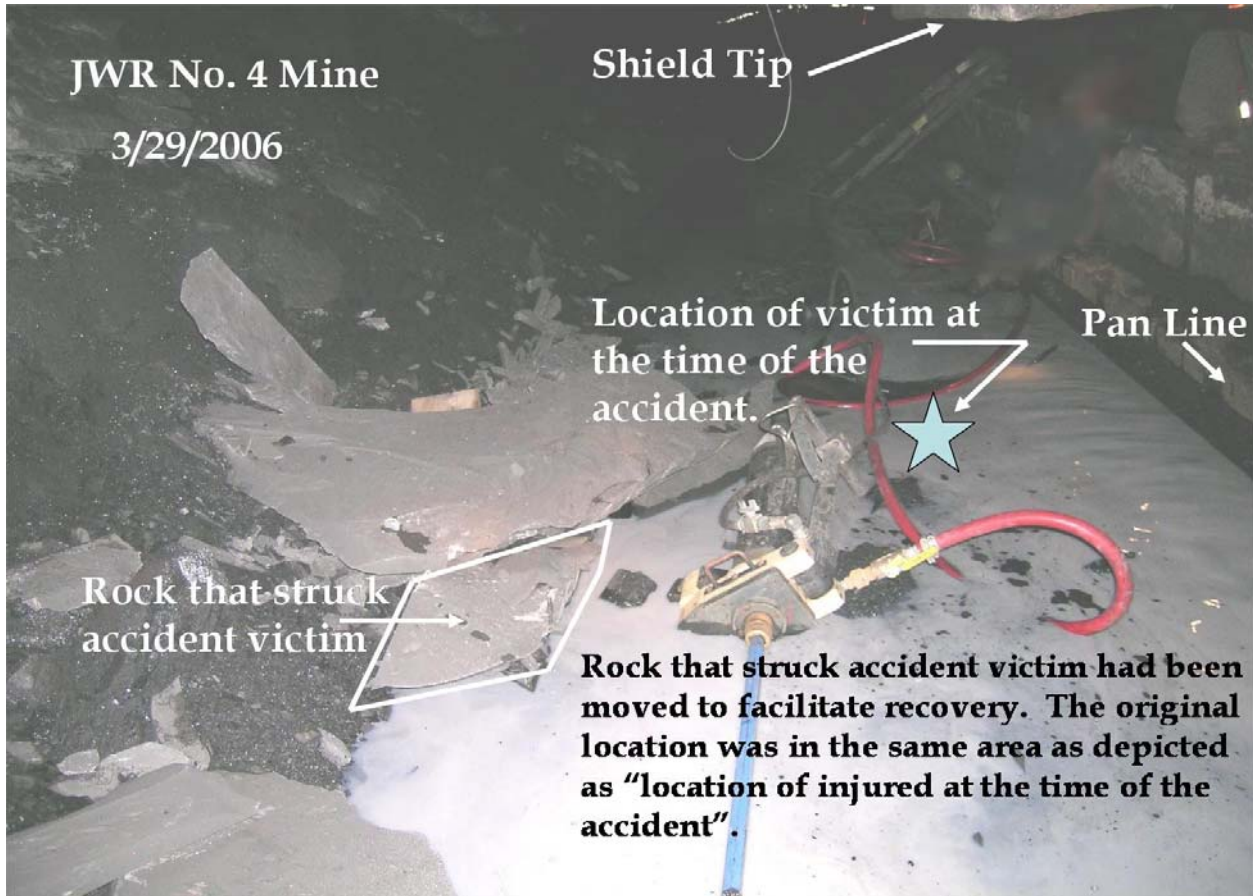
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<sup>1</sup> Amended to read “Hardy positioned himself under the shields, and began installing bolts with a handheld pneumatic drill.”

<sup>2</sup> Amended to read “Plan criteria, for roof bolting along the longwall face, specified that when using handheld drills, and when the distance between the shield tips and the coal face exceeded 5-feet, temporary support would be set.”

<sup>3</sup> Amended

## OVERVIEW



At approximately 11:25 a.m. on March 29, 2006, a miner received injuries that resulted in his death on April 10, 2006. The victim was installing roof bolts between the shield tips and the longwall face in preparation for moving the longwall mining equipment. The victim was located at the outer edge of a shield tip while preparing to drill, when a piece of roof rock fell. He was hit by the rock, which caused him to fall, striking his head against the pan-line. The victim had worked at the Jim Walter Resources, Inc. No. 4 Mine for 23 years.

The accident occurred because the mine operator's procedures for roof bolting along the longwall face were not adequate.

## GENERAL INFORMATION

The No. 4 Mine, I.D. 01-01247, is owned and operated by Jim Walter Resources, Inc. The mine is located in Tuscaloosa County, Alabama, near the community of Brookwood.

The mine provides employment for 454 persons and operates 6 days per week, 3 shifts per day with production on all shifts. The mine produces an average of 9,700 clean tons per day. The miners are represented by the United Mine Workers of America (UMWA).

The mine operates in the Blue Creek coal seam, with a mining height that averages seven feet. At the time of the accident, the mine was operating four mechanized mining units (MMU), three continuous mining machine units and one longwall unit.

The principal officials for the mine at the time of the accident were:

Keith Shalvey.....Mine Manager  
Ken Russell.....Safety Manager

A Safety and Health Inspection was completed on December 30, 2005, and another was on going at the time of the accident. The Non-Fatal Days Lost (NFDL) injury incidence rate for the mine for the previous quarter was 3.02 compared to the national NFDL rate of 4.65.

## DESCRIPTION OF THE ACCIDENT

On March 29, 2006, the day shift began at 7:00 a.m. Garry Jones, victim/longwall helper, and the longwall recovery crew entered the mine, and traveled to the N-13 panel to continue work preparing to move the longwall section to a new panel. The N-13 section had mined to the stop line. Work was being performed to support the roof by means of meshing and roof bolting between the shield tips and face, so the longwall equipment could be disassembled and moved to a new panel (Appendix B). Jones and another longwall helper, William Hardy, proceeded down the longwall face where they had been assigned to install roof bolts at the middle of three stations set up for roof bolt installation. The middle station was between Nos. 100 and 110 shields.

Jones and Hardy began roof bolting in their assigned area. Prior to the installation of roof bolts, portions of the roof had fallen between the area of the Nos. 100 and 110 shields and in the area of the 130 shield. The shearer was taken to these areas and the fallen rock was cleaned up, so roof bolting could commence. The area around the 130 shield was also scaled with a roof bar.

Work proceeded normally. Hardy positioned himself under the shields, and began installing bolts with a handheld pneumatic drill. Jones was assisting Hardy by preparing the roof bolts (putting plates, and T-boards on the bolts). They were installing four foot resin grouted bolts. Hardy began drilling at the 110 shield, positioning himself downwind of the ventilation current; however, this caused the water and drill cuttings to blow back on him and into his face. He then repositioned himself so that the ventilating current was coming over his back. He set twelve roof bolts when Jones relieved him. The drill was positioned approximately three feet from the shield tip, with the control handle under the shield (Appendix B). Jones took a similar position as Hardy, with his back to the ventilating current. By doing so, Jones had his right side and back toward the unbolted portion of the roof, making it difficult to observe the roof conditions while drilling. Jones had installed approximately four bolts when he moved beneath the No. 103 shield and started drilling for the fifth bolt. While drilling, a piece of roof rock fell from the right, striking Jones and the handle of the drill, knocking the handle from Jones. Jones fell backward, striking his head on the pan-line. Jones also suffered a contusion to the right hand and fracture to his left leg.

Cardio-pulmonary resuscitation was administered to the victim. He was placed on a stretcher, and transported off the longwall face. He had a strong, rapid pulse, but was not breathing on his own. He was transported to the surface and flown by helicopter to the Druid City Hospital Regional Medical Center, where he died as a result of his injuries on April 10, 2006.

## **INVESTIGATION OF THE ACCIDENT**

At approximately 11:35 a.m. on March 29, 2006, the No. 4 Mine Control Room Operator informed Gary Wirth, Assistant District Manager, that a serious accident had occurred. MSHA accident investigators responded and an order pursuant to Section 103(k) of the Federal Mine Safety & Health Act of 1977 was issued to ensure the safety of the miners until an investigation could be conducted. The accident investigators made a physical examination of the accident scene, interviewed employees, and reviewed work conditions relative to the accident. MSHA conducted the investigation with the assistance of state investigators, mine management, miners' representatives, and employees. Seven persons were interviewed during the investigation. On April 11, 2006, Dale Byram, Director of Safety for Jim Walter Resources, Inc. informed Wirth that Jones had died as a result of the injuries suffered on March 29.

## **DISCUSSION**

### **Roof Control Plan**

The Roof Control Plan in effect for the No. 4 Mine, at the time of the accident, was approved on November 30, 2005. The primary roof support as specified in the plan could consist of mechanically anchored tensioned, combination, point anchor, tensioned rebar, or fully grouted roof bolts, with a 36-inch minimum length, and a standard 5-inch x 5-inch bearing plate, installed on 5-foot centers.

The support used at the accident site was 48-inch fully grouted roof bolts, with standard bearing plates, and wood T-boards. The roof bolts were installed on centers that were 5-foot or less.

Plan criteria, for roof bolting along the longwall face, specified that when using handheld drills, and when the distance between the shield tips and the coal face exceeded 5-feet, temporary support would be set. At the time of the accident, the shield tips were within 5-feet of the coal face.

### **Mine Conditions and Geology**

The longwall mining height was approximately 5 to 6-feet of the Blue Creek coal seam. The immediate roof at the accident site was layered sandstone, with joints and fractures present.

The rock that separated from the roof and struck the victim was approximately 4-inches x 12-inches x 24-inches.

### **Work History and Training**

Garry Jones had a total of 23 years, 17 weeks, and 5 days mining experience. All this time was at the No. 4 Mine, working on the longwall. A review of Jones' training records indicated that he had received all of the required training.

## ROOT CAUSE ANALYSIS

An analysis was conducted to identify the basic causes of the accident that were correctable through reasonable controls. During the analysis, a root cause was identified that may have either prevented the accident or mitigated its consequences.

*Root Cause:* The mine operator's existing procedures for installing roof bolts on the longwall face with handheld drills did not include provisions for safe positioning of the drill operator.

*Corrective Action.* The mine operator submitted and the district has approved a supplement to the Approved Roof Control Plan that reads as follows.

- "The pin men will position their drill perpendicular to the faceline while standing under a shield canopy to install their first pins in all areas where pinning will be started in the mesh cycle."
- "The pin men will position themselves adjacent to previously installed bolts as they progressively pin the faceline in all areas of pinning."

## CONCLUSION

The accident occurred when a longwall roof drill operator was struck by rock that fell from between the longwall face and the shield tips, causing the miner to fall and strike his head against the pan-line. The victim was working at this location because the mine operator's procedures for installing roof bolts along the face during longwall shield removal did not include provisions for safe positioning of the drill operator as roof bolts were installed.

**Approved by:**

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Richard A. Gates  
District Manager

## ENFORCEMENT ACTIONS

**§103(k) Order No. 7684533:** Issued to Jim Walter Resources, Inc. No. 4 Mine.

The original order was issued because the mine had experienced a non-fatal injury when a piece of roof rock fell causing the bolter operator to fall backward into the pan line on the longwall face. The order was issued to ensure the safety of any person working on the longwall face until an investigation could be completed.

**§104(a) Citation No. 7684534 Part 30 75.202(a):** Issued to Jim Walter Resources, Inc. No. 4 Mine.

The operator failed to support or otherwise control the roof to protect persons from hazards related to falls of the roof on the N-13 Longwall Panel. On March 29, 2006, an area of unsupported roof fell and led to a fatal injury of a miner on April 10, 2006.



## APPENDIX A

### Persons Participating in the Investigation

#### JIM WALTER RESOURCES, INC.

<u>Name</u>	<u>Title</u>
Dale Byram.....	Division Safety Manager
Ken Russell.....	Director of Safety
Darrell Loggins.....	Longwall Manager

#### ALABAMA DEPARTMENT OF INDUSTRIAL RELATIONS MINE SAFETY AND INSPECTION

<u>Name</u>	<u>Title</u>
Gary Key.....	State Inspector

#### MINE SAFETY AND HEALTH ADMINISTRATION

<u>Name</u>	<u>Title</u>
Charles T. Langley.....	Supervisory Mine Safety and Health Specialist
Raymond C. Dorton, Jr.....	Roof Control Specialist

#### UNITED MINE WORKERS OF AMERICA

Larry Turner.....	Mine Safety Committee
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## APPENDIX B

### Longwall Work Area

